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PART IV:

PENSION BENEFIT GUARANTY CORPORATION

PLAN BENEFITS

Proposed Valuation Methods

PENSION BENEFIT GUARANTY CORPORATION

[29 CFR Part 2611]

VALUATION OF PLAN ASSETS

Proposed Rulemaking

Section 4041(b) of Title IV of the Employee Retirement Income Security Act of 1974 (29 U.S.C. 1301–1381) (hereinafter referred to as the "Act") requires the Pension Benefit Guaranty Corporation (hereinafter referred to as the "PBGC") to determine whether the assets of a plan, if allocated as provided in section 4044 of the Act, are sufficient to discharge when due all obligations of the plan with respect to the basic benefits defined in section 4001(a)(6) of the Act. Section 4062(b) of the Act provides that an employer, which maintains a plan as to which benefits are guaranteed by the Act, may be liable to the PBGC in the amount by which benefits guaranteed pursuant to section 4022(a) of the Act exceed the current value of plan assets allocable to such benegts on the date of termination.

Notice is hereby given that the PBGC proposed to amend Chapter XXVI of Title 29, Code of Federal Regulations, to add a new Part 2611, set forth below, which prescribes the standards for valuing plan assets.

This proposed regulation was prepared by the staff of the PBGC. With the understanding that this is a staff document without the Board's endorsement of the policies underlying it, the Board of Directors of the PBGC authorized publication of this proposed regulation in the FEDERAL REGISTER to invite public comments and suggestions that will assist the Board in its consideration of the regulation to be finally adopted.

Interested persons may participate in this proposed rulemaking by submitting written data, views or arguments to the Office of the General Counsel, Pension Benefit Guaranty Corporation, Suite 7200, 2020 K Street, NW., Washington, D.C. 20006. Each person submitting comments should include his name and address, identify this notice, and give reasons for any recommendations. Comments should be submitted not later than January 7, 1976. Copies of written comments will be available for examination by interested persons in the Office of Communications, PBGC, Suite 7100, 2020 K Street, NW., Washington, D.C. between the hours of 9 a.m. and 4 p.m. The proposal may be changed in light of comments received.

In order to determine whether the assets of a plan are sufficient when allocated as provided in § 4044 of the Act to satisfy "basic benefits," and to determine the extent, if any, of employer liability computed in accordance with § 4062 of the Act, it is necessary to compute the value of plan assets on the date of termination, the value of the basic benefits guaranteed by the PBGC pursuant to section 4022 of the Act, and the value of other liabilities and expenses accrued by the plan prior to or on the date of termination. The assets of a plan are to be valued at their fair market value on the date of termination. Fair market value is defined as the price at which property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.

This proposed regulation prescribes, as the method of valuation for determining the value of a plan asset, whichever method most accurately reflects the fair market value of such asset. In addition, § 2611.5 of the proposed regulation contains specific presumptions relating to the fair market value of particular types of plan assets such as securities which are regularly traded in well established markets. Those types of plan assets, such as cash, receivables and real estate, which are not covered by these specific presumptions, are to be valued by whichever method of valuation most accurately reflects their fair market value. It also should be noted that the rules contained in § 2611.5 are only presumptions and, therefore, will not apply where another method of valuation more accurately reflects an asset's value; e.g., where a plan's entire holdoing of a security could not be sold at the prevailing market price on the valuation date.

In regard to specific kinds of securities, § 2611.5 provides that:

(1) The presumed value of Treasury bills will be computed from the mean of the bid and asked discount for the bill on the date of termination, as nationally published in general circulation daily newspapers.

(2) The presumed value of Treasury notes and bonds, and Federal agency securities will be computed from the mean of the bid and asked price for the security on the date of termination, as nationally published in general circulation daily newspapers.

(3) The presumed value of shares in open-end mutual funds will be the net asset value per share of the mutual fund on the date of termination, as nationally published in general circulation daily newspapers.

(4) The presumed value of shares in collective trusts will be the value per share computed by the manager of the collective trust according to the terms of the trust on the normal valuation date on or within one month after the date of termination. The application of this presumption is contingent upon the normal valuation date of the trust falling within one month of the date of termination, and upon no distribution being made by the trust in relation to shares of the trust between the date of termination and the normal valuation date of the trust.

(5) The presumed value of common and preferred stocks, warrants, and closed-end mutual funds that are traded principally on an exchange, and publicly traded corporate bonds that are traded on an exchange, will be the closing sale price on the principal exchange where the security or obligation is traded on the date of termination, as nationally published in a general circulation daily newspaper. If there is no such closing sale price, the presumed value will be the average of the nationally published closing sale price for the secuirty or obligation nearest the date of termination and in the period five trading days before the date of termination and the nationally published closing sale price nearest the date of termination and in the period five trading days after the date of termination.

It should be noted that the presumed value of a publicly traded corporate bond does not reflect interest earned by the bond prior to or on the date of termination.

(6) The presumed value of common and preferred stock, warrants and closed-end mutual funds which are traded principally otherwise than on an exchange, will be the average of the "end-of-day" bid and asked prices for the security on the valuation date, as made available for publication by the National Association of Securities Dealers Automated Quotations System and nationally published in general circulation daily newspapers. If there are no such bid and asked prices on the valuation date, the presumed value of the security will be the average of such bid and asked prices on the date nearest the date of termination and within five days before the date of termination, and such bid and asked prices on the date nearest the date of termination and within five days after the date of termination.

(7) The presumed value of state and municipal obligations will be the average of bid and asked prices for such obligations on the valuation date, as nationally published in a general circulation daily newspaper. If there are no such bid and asked prices on the valuation date, the presumed value will be the average of such bid and asked prices on the date nearest the valuation date and within five days before the valuation date, and such bid and asked prices on the date nearest the valuation date and within five days after the valuation date.

In relation to the above presumptions, it should be noted that whenever the presumption is based on the use of bid and asked prices, the bid and asked prices which are nationally published in general circulation daily newspapers are prescribed by this proposed regulation even though such bid or asked price may be a composite figure. In addition, it should be recognized that the "end-of-day" bid and asked prices which are nationally published may not be the actual end-of-day bid or asked price for a security .

The PBGC made the decision to use the presumptions contained in § 2611.5 after reviewing procedures used by commercial trustees to value pension plan assets and the Internal Revenue Service Regulations concerning the valuation of assets for purposes of determining estate and gift tax liability.

To enable the PBGC to determine the value of plan assets, the PBGC also is considering whether to require plan administrators to report to the PBGC, on a prescribed form in accordance with the criteria specified in this proposed regulation, specific data pertaining to plan assets and valuations. Interested persons

are invited specifically to comment on this approach as well.

In consideration of the foregoing, it is proposed to amend Chapter XXVI of Title 29, Code of Federal Regulations, by adding a new Part 2611 to read as follows:

PART 2611—VALUATION OF PLAN ASSETS

Sec.
2611.1 Purpose and scope.
2611.2 Definitions.
2611.3 Valuation of plan assets.
2611.4 Valuation date.
2611.5 Fair market value presumptions.

AUTHORITY: Secs. 4002(b)(3), 4041(b), 4062(b)(1)(B); Pub. L. 93-406, 88 Stat. 1004, 1020, 1029 (29 U.S.C. 1302(b)(3), 1341(b), 1362(b)(1)(B).

§ 2611.1 Purpose and scope.

(a) This part sets forth standards for valuing plan assets in order to compute plan asset sufficiency for purposes of section 4041(b) of the Act, and the current value of plan assets for purposes of section 4062(b)(1)(B) of the Act.

(b) This part applies to all plans which are covered, as provided by section 4021 of the Act, and which terminate:

(1) After June 30, 1974 and before September 2, 1974 and which have complied with the requirements of § 4082(b) of the Act; or,

(2) On or after September 2, 1974.

§ 2611.2 Definitions.

For purposes of this part: "Act" means the Employee Retirement Income Security Act of 1974.

"Exchange" means a national securities exchange registered with the Securities and Exchange Commission under section 6 of the Securities Exchange Act of 1934.

"Fair market value" means the price at which property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.

"National Association of Securities Dealers Automated Quotations System" means the automated quotations system sponsored by the National Association of Securities Dealers, Inc., a national securities association registered with the Securities and Exchange Commission under section 15A of the Securities Exchange Act of 1934.

"Principally traded" means the market place at which the greatest volume of trades normally occur.

§ 2611.3 Valuation of plan assets.

Plan assets shall be valued at their fair market value on the valuation date, as defined in § 2611.4, based on the method of valuation which most accurately reflects such fair market value.

§ 2611.4 Valuation date.

Except as otherwise specifically provided, the assets of a plan shall be valued for purposes of this part as of the termination date of the plan.

§ 2611.5 Fair market value presumptions.

The fair market value of the following assets will be presumed to be the value determined in accordance with the rules contained in this section.

(a) *Treasury bills.* The fair market value of Treasury bills will be presumed to be the value computed from the average of the bid and asked discount for the bill on the valuation date, as nationally published in a general circulation daily newspaper.

(b) *Treasury notes, bonds and Federal agency securities.* The fair market value of Treasury notes, bonds and Federal agency securities will be presumed to be the value computed from the average of bid and asked prices for the security on the valuation date, as nationally published in a general circulation daily newspaper.

(c) *Shares in open-end mutual funds.* The fair market value of shares in open-end mutual funds will be presumed to be the net asset value per share of the mutual fund on the valuation date, as nationally published in a general circulation daily newspaper.

(d) *Shares in collective trusts.* The fair market value of shares in collective trusts will be presumed to be the value per share of the trust as reflected on a statement of account prepared by the manager of the collective trust. The value per share of the trust is to be determined in accordance with the procedures normally employed by the manager of the trust, and as of the normal date on which the trust is valued if that date is within one month after the termination date. This presumption will apply only if there were no distributions from the trust in relation to shares of the trust in the interval between the plan's termination date and the normal valuation date of the trust.

(e) *Publicly traded corporate bonds.* If the obligation is traded on an exchange, the fair market value of publicly traded corporate bonds exclusive of interest earned prior to or on the valuation date will be presumed to be the closing sale price on the valuation date on the principal exchange where the obligation is traded, as nationally published in a general circulation daily newspaper. If there is no such nationally published closing sale price, the fair market value will be presumed to be the average of:

(1) The nationally published closing sale price on the principal exchange where the obligation is traded on the date nearest the valuation date and within five trading days before the valuation date, and

(2) The nationally published closing sale price on the principal exchange where the obligation is traded on the date nearest the valuation date and within five trading days after the valuation date.

(f) *Common and preferred stocks, warrants and closed-end mutual funds.* If such security is traded principally on an exchange, the fair market value of common and preferred stocks, warrants, and closed-end mutual funds will be presumed to be the closing sale price on the valuation date on the principal exchange where such security is traded, as nationally published in a general circulation daily newspaper. If the security is traded principally otherwise than on an exchange, and quoted on the National Association of Securities Dealers Automated Quotations System, the fair market value will be presumed to be the average of the end-of-day bid and asked prices for the security on the valuation date, as made available for publication by such system and nationally published in a general circulation daily newspaper. If there is no such nationally published closing sale price or end-of-day bid and asked prices on the valuation date, the fair market value of such securities will be presumed to be the average of:

(1) For securities traded principally on an exchange, the nationally published closing sale price on the date nearest the valuation date and within five trading days before the valuation date and the nationally published closing sale price on the date nearest the valuation date and within five trading days after the valuation date; or,

(2) For securities traded principally otherwise than on an exchange, the average of the nationally published end-of-day bid and asked prices on the date nearest the valuation date and within five trading days before the valuation date, and the average of the nationally published end-of-day bid and asked prices on the date nearest the valuation date and within five trading days after the valuation date.

(g) *State and municipal obligations.* The fair market value of state and municipal obligations will be presumed to be the average of bid and asked prices for the security on the date of valuation, as nationally published in a general circulation daily newspaper. If there are no such nationally published bid and asked prices on the valuation date, the fair market value of such securities will be presumed to be the average of the nationally published bid and asked prices on the date nearest the valuation date and within five trading days before the valuation date, and the average of the nationally published bid and asked prices on the date nearest the valuation date and within five trading days after the valuation date.

Issued in Washington, D.C. this 9th day of December, 1975.

STEVEN E. SCHANES,
Executive Director, Pension Benefit Guaranty Corporation.

Issued on the date set forth above, pursuant to a resolution of the Board of Directors approving the publication of these proposed regulations and authorizing its Executive Director to issue same.

HENRY ROSE,
Secretary.

[FR Doc.75-33610 Filed 12-11-75;8:45 am]

[29 CFR Part 2610]

VALUATION OF PLAN BENEFITS

Proposed Rulemaking

Section 4041 of the Employee Retirement Income Security Act of 1974 (hereinafter referred to as the "Act") requires the Pension Benefit Guaranty Corporation (hereinafter referred to as the "PBGC") to determine whether the assets of a pension plan covered under Title IV of the Act will be sufficient, as of the date of termination, to discharge all obligations with respect to benefits guaranteed under Title IV of the Act when they come due. If the PBGC determines that the plan assets are insufficient to discharge all such obligations, the amount of underfunding establishes the amount the PBGC will pay under the guarantee provisions of Title IV, and therefore, the limit of potential employer liability pursuant to section 4062. In the event that plan assets are determined to be sufficient, plan assets must be allocated pursuant to section 4044.

In determining if a plan is sufficient, the proper allocation of assets, and the amount of potential or actual employer liability, the PBGC must determine the current value of the plan's benefits as of the date of termination. The Act does not provide a method for determining the value of such benefits. Therefore, notice is hereby given that the PBGC proposes to amend Chapter XXVI of Title 29, Code of Federal Regulations, to add a new Part 2610, set forth below, which establishes the methods for valuing plan benefits.

This proposed regulation was prepared by the staff of the Pension Benefit Guaranty Corporation at the request of the Board of Directors of the Corporation. With the understanding that this is a staff document without the Board's endorsement of the policies underlying it, the Board authorized publication of this proposed regulation in the FEDERAL REGISTER to invite public comments and suggestions that will assist the Board in its consideration of the regulation to be finally adopted.

Interested persons may participate in this proposed rulemaking by submitting written data, views, or arguments to the Office of the General Counsel, Pension Benefit Guaranty Corporation, Room 7200, 2020 K Street, NW., Washington, D.C. 20006. Each person submitting comments should include his name and address, identify this notice, and give reasons for any recommendations. Comments should be submitted before January 7, 1976. Copies of written comments will be available for examination for a reasonable period by interested persons in the Office of Communications of the PBGC, Room 7100, 2020 K Street, N.W., Washington, D.C. 20006, between the hours of 9:00 a.m. and 4:00 p.m. This proposal may be changed in light of the comments received.

General Approach. The value of a benefit as of the date of termination is the current value of the cost that the PBGC normally should incur as of the date of terminaiton, in providing the benefit under reasonable assumptions as to mortality, rates of retirement when early retirement is possible, administrative expenses that will be incurred, and investment return assumptions reflecting current and longer term investment opportunities. The PBGC's assumptions will be adjusted from time to time to reflect changes in market conditions and mortality experience.

The current value of plan benefits represents an estimate of costs to the PBGC, not of costs to the plan sponsor. In general, because the PBGC can pool the assest and liabilities of many terminated plans for purposes of asset management, benefit administration and the purchase of annuities, the PBGC's projected costs in providing plan benefits should generally be less than the costs that would be incurred by some individual plans themselves, especially very small plans, which are expected to constitute a majority of terminating plans.

Mortality Rates. The mortality rates proposed to be used in computing the current value of benefits are contained in Appendix A of the proposed regulation. Tables I and II of the Appendix contain the mortality rates to be utilized for healthy male and female participants. The table used is the Unisex Pension 1984 table, which is a mortality table recently developed with respect to non-insured pension plans from the 1971 Reports of Mortality and Morbidity Experience published by the Society of Actuaries. The PBGC has selected this table because, among other factors, it was based upon a study that took into account more data than was used to construct the other tables considered, and the data used reflects a larger cross section of occupations. The table represents what the PBGC anticipates will be its experience in this area. To account for the difference between male and female mortality experience, the Unisex Pension 1984 table has been set forward one year for males and set back four years for females, in accordance with the recommendations that accompanied the table.

Tables III and IV contain the mortality rates to be utilized for male and female participants who are receiving disability payments pursuant to the terms of the plan but are not also receiving Social Security disability benefits. The PBGC has been advised that there are no mortality tables in general use designed to value the annuity of a disabled life not receiving Social Security disability benefits. Tables III and IV reflect mortality rates for less than fully healthy lives. Tables III, to be used for males, is the 1958 Commissioners Standard Ordinary table; and table IV, to be used for females, is the 1958 Commissioners Standard Ordinary table set back five years.

Tables V and VI contain the mortality rates to be utilized for disabled participants who are receiving Social Security disablty benefits. These tables are based partly upon the most recent table issued by the Social Security Administration. The Social Security Administration table contains values only up to age 65. Therefore, commencing with age 65, tables V and VI represent a gradual merger into the Commissioners Standard Ordinary 1958 table at age 87 for males, and at age 87 with a five year set back for females. The merger of the Commissioners Standard Ordinary 1958 table and the Social Security table reflects the assumption that the disability of a participant alive at each age after 65 is likely to be of less significance as a factor in increasing the probability of death.

Interest Rates. Appendix B of the proposed regulation contains the interest rates to be utilized in computing the value of benefits. Computing the value of plan benefits on a current value basis, as required by Title IV, will frequently necessitate use of different valuation factors than would be used in an ongoing plan. This is particularly true with respect to interest rates.

In an ongoing plan, the valuation of both plan assets and liabilities is principally directed towards determining the contrbutions required by the employer to fund both current and past pension benefits. Cash flow management in most business situations make it essential that pension contributions over a given period be reasonably predictable; therefore, somewhat conservative assumptions are generally used to avoid subsequent unexpected increases in required contributions. Thus, the valuation of assets and benefits in an ongoing plan frequently employs techniques designed to smooth out relatively short-term market fluctuations. In this respect, in selecting an interest rate for valuing plan benefits, the plan's actuary is likely to use a rate which reflects a conservative estimate of longer term investment returns rather than a rate which reflects current market opportunities and which would likely require frequent adjustments. In addition, uncertainties with respect to salary adjustments, employee turnover and other contingencies are likely to be compensated for by loading margins into the interest rate assumption, thereby lowering the effective interest rates.

To value benefits upon termination, interest assumptions should reflect current market opportunities. This consideration alone would result in interest rates which differ from the rates used by ongoing plans. In addition, the margins which are frequently loaded into the interest assumptions of ongoing plans as a hedge against such factors as salary adjustments and employee turnover are not applicable in the case of a termination, where the benefits of participants are definitely determinable. Thus, it is to be expected that the interest assumptions used by the PBGC for valuing plan benefits will vary significantly from the interest assumptions used by plans for valuing plan benefits prior to their termination.

Table I contains the interest rates applicable to immediate annuities and table II, the rates applicable to death benefits. In computing the value of a deferred annuity, the interest rates in Appendix

B, table III of the proposed regulation are to be applied in conjunction with the intervals of deferment set forth in that table. Since these tables will be amended when the interest assumptions are adjusted to reflect changes that have occurred in market conditions, each appendix will specify the period of time for which it is applicable.

Expenses. The PBGC will incur a variety of expenses in providing plan benefits. For purposes of benefit valuation normal expenses directly associated with providing a benefit have been estimated and an appropriate adjustment has been made in the applicable assumed rate of investment returns in order to account for those costs. This adjustment has been made to avoid calculating the effect of the expenses upon the value of a benefit separately which would unnecessarily complicate the calculations required to value a benefit. Other costs associated with the PBGC's operations, e.g. determination of sufficiency and collection of employer liability, which are indirectly related to providing a benefit, are not charged to the cost of plan benefits for benefit valuation purposes.

Actuarial notations. Determining and applying the factors necessary to value a benefit involve complex actuarial computations. Such computations can best be described by mathematical symbols, including symbols for accepted mathematical concepts useful only when computed in relation to other such concepts and not definable in ordinary language. Therefore, to assure that the computations necessary to value benefits are stated accurately, they have been expressed in the form of actuarial equations. Paragraphs (b) and (c) of proposed § 2610.2 define the symbols used in the proposed regulation in order to avoid confusion between the system of notation selected by the PBGC and other systems that might be used. Where applicable, the symbols in the proposed regulation are those adopted by the International Congress of Actuaries.

Mortality table. To determine the current value of a plan benefit, a table must be constructed by successively applying given mortality rates to a hypothetical population of a certain number of people whose number is decreased only by death and never increased. The table indicates the number of people alive at each age, up to the age at which no member of the hypothetical population will be alive.

Proposed § 2610.4 sets forth the method, which follows standard actuarial practice, to be used in constructing such a table. The mortality rates to be utilized are contained in Appendix A, described above. The proposed regulation requires that the table is to commence at age 15 with 10,000 lives. Starting the table at that age assures that there will be a value computed for every age for which a plan might provide a benefit to a participant. A hypothetical population of 10,000 lives has been utilized to provide sufficient accuracy of results of computations derived from the values calculated pursuant to proposed § 2610.4.

A separate table shall be constructed for each class of participants described in paragraph (c) of proposed § 2610.4 that has a member with benefits payable under the plan whose benefits are being valued. The tables indicate the number of people alive at a given age, which is substituted in the equations used to value benefits.

Valuation of benefits. The current value of a single deferred payment is equal to the amount of the payment discounted at an assumed rate, or rates, of return on investments applicable to the deferment period, multiplied by the probability that the individual will receive the payment. The value of a benefit is the sum of the current values of such payments. The proposed regulation states the equations that express this relationship when applied to the types of benefits provided by most plans. The equations are those generally accepted in actuarial practice, or are based on reasonable actuarial principles.

Immediate annuities. Proposed §2610.5 indicates the equations to be used to compute the value of benefits payable immediately in the form of single and joint life annuities. The equations used are based upon standard actuarial practice. The interest rates to be applied to compute such annuities are contained in Appendix B, table I.

Deferred annuities. The equations used in valuing deferred annuities, set forth in proposed § 2610.6, represent an adaptation of standard actuarial principles to construct a system that reflects the experience the PBGC anticipates in this area. The equations apply different interest rates for specified intervals of the deferment period; the interest rates applied in the later intervals are lower than those applied in the earlier intervals. It is common financial practice to assume that the rate of return on investments made in the future will be lower than that for investments made in the present or near future. Applying different interest rates over varying intervals of the deferment period reflects this assumption more accurately than would an equation which applied one interest rate for the entire period of deferment. The interest rates and intervals to be applied are contained in Appendix B, table III.

Early retirement benefits. The equations to be used to compute the value of early retirement benefits, set forth in proposed § 2610.7, also involve an adaptation of standard actuarial principles. The equations usually utilized in this area take into account a variety of factors with respect to valuing such benefits. The PBGC has modified and condensed those equations to reflect only the effect the probability of early retirement has on the value of the early retirement benefit, taking into account an assumption that all participants will not choose to retire early. Thus, the computations include a factor which reflects the probability that a participant will elect to retire early at each age such retirement is possible. The probability to be utilized shall be determined by the PBGC based on the provisions of the plan and the circumstances of the case.

Death benefits. Proposed § 2610.8 indicates the equations to be used to compute the value of death benefits. The equations used are based upon standard actuarial practices. The interest rate to be applied to compute such benefits is contained in Appendix B, table II.

Refund annuities. Proposed § 2610.9 indicates the equations to be used to compute the value of benefits payable as refund annuities. Since such benefits are annuities combined with a death benefit, the computations involve utilizing values arrived at by use of the equations in proposed §§ 2610.5 and 2610.8.

Valuation of other benefits. The proposed regulation provides a method of valuing the types of benefits that are provided in most plans. The value of benefits payable for periods which are not a whole number of years shall be a value between the values of the two annuities closest in time to such annuity, and will be arrived at by a process of interpolation. See proposed § 2610.3(b). In the event that a benefit must be valued for which a method of valuation is not provided in the proposed regulation, the PBGC will determine the method of valuation to be used, based on reasonable actuarial practices.

A sample of results obtained by application of the methods set forth in the proposed regulation has been provided in tabular form in Appendix C so that, having made the necessary calculations, one may verify the accuracy of results so obtained. Table I of that Appendix indicates the values obtained by valuing a life annuity of 10 dollars per month, payable at various ages, to healthy male and female participants. Table II contains the results obtained by valuing a deferred life annuity of 10 dollars per month to healthy male and female participants, payable at age 60 and 65, based on various ages at the time of plan termination.

In consideration of the foregoing, it is proposed to amend Chapter XXVI of Title 29, Code of Federal Regulations, by adding a new Part 2610 to read as follows:

PART 2610—VALUATION OF BENEFITS

Sec.

2610.1 Purpose and scope.
2610.2 Definitions.
2610.3 Methods of computation.
2610.4 Construction of a mortality table.
2610.5 Valuation of immediate annuities.
2610.6 Valuation of deferred annuities.
2610.7 Valuation of early retirement benefits.
2610.8 Valuation of death benefits.
2610.9 Valuation of refund annuities.
2610.10 Valuation of other benefits.

Appendix A—Mortality values.

Appendix B—Interest rates and intervals of deferment periods.

Appendix C—Illustrative benefit valuation results.

AUTHORITY: Sec. 4002(b)(3), 4041, 4044, 4062(b)(1)(A), Pub. L. 93-406, 88 Stat. 1004, 1020, 1025-27, 1029, (29 U.S.C. 1302(b)(3), 1341, 1344, 1362(b)(1)(A)).

§ 2610.1 Purpose and scope.

(a) The purpose of this part is to establish the method of computing the actuarial value of the liabilities, as of the date of termination, of a pension plan with respect to benefits payable on or after such date to participants or beneficiaries.

(b) This part applies to all plans covered under Title IV of the Employee Retirement Income Security Act of 1974.

§ 2610.2 Definitions.

For the purposes of this part (unless otherwise required by the context):

(a) *Words and phrases.* "Act" means the Employee Retirement Income Security Act of 1974 (88 Stat. 829 et seq.).

"Age" means the "insurance age" or "age of nearest birthday," which is obtained by rounding to the nearest whole year the individual's exact age. Half years are rounded to the next highest year.

"Cash refund annuity" means an annuity under which if the participant dies prior to the time when he has received pension payments equal to a fixed sum specified in the plan, then the balance is paid as a lump-sum death benefit.

"Closed population" means a hypothetical number of people whose number is decreased only by death, and is never increased.

"Installment refund annuity" means an annuity under which if the participant dies prior to the time he has received pension payments equal to a fixed sum specified in the plan, then the balance is paid as a death benefit in periodic installments equal in the amount to the participant's periodic benefit.

"Deferment period" means the period between the age of a participant as of the date of plan termination and the age at which benefit payments begin.

"PBGC" means the Pension Benefit Guaranty Corporation.

"Plan" means a plan providing benefits which are guaranteed under Title IV.

"Title IV" means Title IV of the Act.

(b) *Mathematical symbols and terms.* "Fundamental symbols." The following fundamental symbols are representations of the basic actuarial concepts utilized in computing the present value of a benefit:

x represents the age of a participant.

q_x represents the probability that an individual whose present age is x will not survive to attain age x+1.

l_x represents the number of people, within a closed population, which survive to attain age x.

ω represents the first age for which $q_x=1$, that is, the age at which the probability of not surviving to age x+1 is 100%.

i represents an interest rate.

a represents an annuity of one dollar per annum.

A represents a death benefit which corresponds to an insurance benefit of one dollar payable at the end of the year of death.

DA represents a death benefit which corresponds to an amount of decreasing term insurance payable for a specified number of years.

m represents the number of times per year payments of benefits are made.

$\overline{n|}$ is a symbol for a period of time consisting of n years.

(x) represents a person whose age is x.

(y) represents another person whose age or death affects the value of the benefit being computed.

"Commutation symbols." The following commutation symbols are representations of actuarial computations in a condensed form and are used to facilitate expression of actuarial equations:

v is equal to the interest discount for one year, that is, the present value of one dollar payable one year from today, and is computed by the equation $v = \frac{1}{1+i}$.

d_x is equal to the number of persons out of a closed population alive at age x, ℓ_x, who do not attain the age of x+1, and is computed by the equation $d_x = q_x \cdot \ell_x$ rounded to four decimal places.

ℓ_{x+1} is equal to the number of people out of a closed population alive at age x+1, and is computed by the equation $\ell_{x+1} = \ell_x - d_x$.

D_x is equal to the quantity $v^x \cdot \ell_x$.

N_x is equal to the sum of all D_x's for all ages equal to and greater than x, to the last age when a person is alive in a closed population, and is computed by the equation $N_x = D_x + D_{x+1} + D_{x+2} + \cdots + D_\omega$.

$N_x^{(m)}$ is a modification of N_x used in situations where benefit payments are made more frequently than once a year, and is computed by the equation $N_x^{(m)} = N_x - \frac{m-1}{2m} D_x$.

C_x is equal to the quantity $v^{x+1} \cdot d_x$.

M_x is equal to the sum of all C_x's for all ages equal to and greater than x, to the last age when a person is alive in a closed population, and is computed by the equation $M_x = C_x + C_{x+1} + C_{x+2} + \cdots + C_\omega$.

R_x is equal to the sum of all M_x's for all ages equal to and greater than x, to the last age when a person is alive in a closed population, and is computed by the equation $R_x = M_x + M_{x+1} + M_{x+2} + \cdots + M_\omega$.

$\bar{C}_x$ is a modification of C_x used in situations where benefit payments commence upon death, not at the end of the year, and is computed by the equation $\bar{C}_x = (1+\frac{i}{2}) C_x$.

$\bar{M}_x$ is a modification of M_x used in situations where benefit payments commence upon death, not at the end of the year, and is computed by the equation $\bar{M}_x = (1+\frac{i}{2}) M_x$.

$\bar{R}_x$ is a modification of R_x used in situations where benefit payments commence upon death, not at the end of the year, and is computed by the equation $\bar{R}_x = (1+\frac{i}{2})R_x$.

D_{xy} is a modification of D_x which reflects the fact that the status of another life limits the payment of benefits, and is computed by the equation $D_{xy} = \frac{(1+i)^{\frac{x+y}{2}} D_x \cdot D_y}{10,000}$.

N_{xy} is equal to the sum of all D_{xy}'s for all pairs of ages of the form x+t, y+t, where t is a non-negative integer, for all such pairs of ages equal to and greater than x and y, to the last age when one of the pair is alive in a closed population, and is computed by the equation

$$N_{xy} = D_{xy} + D_{x+1:y+1} + D_{x+2:y+2} \cdots .$$

$N^{(m)}_{xy}$ is a modification of N_{xy} used in situations where benefit payments are made more frequently than once a year, and is computed by the equation $N^{(m)}_{xy} = N_{xy} - \frac{m-1}{2m} D_{xy}$.

(c) Actuarial notations. The following are actuarial notations used in this part:

•• is a notation which, when placed over a symbol indicating an annuity, indicates that payments are to be made at the beginning of the payment period, for example $\ddot{a}_x$.

: is a notation which separates two symbols in a suffixed subscript representing the status of two periods of life or time, when two such periods are utilized in the context of an actuarial symbol. For example $a_{x:\overline{n}|}$ indicates that the annuity is payable until the expiration of a life aged x, or a term certain of n years, whichever is earlier.

‾ is a notation which, when placed over a symbol indicating the value of a life insurance benefit, indicates that the benefit is payable immediately upon death. When placed over two symbols in a suffixed subscript representing the status of a life or a period of time it indicates that benefit payments continue

during the existence of either. For example, $\bar{A}$ represents a benefit payable immediately upon death, and $a_{\overline{x:n}|}$ represents an annuity payable until the later of the end of a life age x or the passage of n years.

$'$ is a notation which, when placed over a symbol in a suffixed subscript indicating the status of a life or a period of time, indicates that expiration of such life or period of time causes payments to commence, for example $A'_{\overline{x:n}|}$.

§2610.3 Methods of computation.

(a) The value of a benefit payable to each participant under a plan shall be determined by applying the equation contained in this part for valuing benefits of that type, or on the basis of any other equation which the PBGC determines to have a consistent relationship to the equation whose use is prescribed by this part.

(b) For annuities payable for periods of duration which are not a whole number of years, a linear interpolation method shall be used, that is, the annuity shall have a value which is between the values of the two annuities with yearly periods which are closest to the annuity being valued, which value is computed by adding

to the annuity for the lesser period of time the following: an amount equal to the difference between the value of the two closest annuities, multiplied by a fraction, the numerator of which is the number of months that the annuity being valued is in effect beyond the period of the lesser annuity, and the denominator of which is 12.

§2610.4. Construction of a mortality table.

(a) The number of persons in a closed population alive at age x, shall be determined by constructing a mortality table by applying mortality rates, q_x's, to a group of 10,000 lives, starting with age 15, x_0, using the following procedure:

(1) $l_{15} = 10,000$

(2) Compute l_{16} from the equation $l_{16} = l_{15} - d_{15}$, computing d_{15} from the equation $d_{15} = l_{16} \cdot q_{16}$.

(3) Compute l_{17} from the equation $l_{17} = l_{16} - d_{16}$, computing d_{16} from the equation $d_{16} = l_{16} \cdot q_{16}$.

(4) This process is continued until the age when $l_x = 0$, that is, until the age is reached when no person will be alive. l_x will equal zero for all ages beyond ω.

(b) A separate mortality table shall be constructed for each class of participants described in paragraph (c) of this section, that has a member with benefits under the plan.

(c) The mortality rates, q_x, in effect on the date of termination shall be utilized to compute the mortality tables. The following rates shall be used:

(1) For healthy male participants, the rates in Appendix A, table I.

(2) For healthy female participants, the rates in Appendix A, table II.

(3) For male participants who are receiving disability payments pursuant to the provisions of the plan but are not also receiving Social Security disability benefits, the rates in Appendix A, table III.

(4) For female participants who are receiving disability payments pursuant to the provisions of the plan but are not also receiving Social Security disability benefits, the rates in Appendix A, table IV.

(5) For disabled male participants receiving Social Security disability benefits, the rates in Appendix A, table V.

(6) For disabled female participants receiving Social Security disability benefits, the rates in Appendix A, table VI.

§2610.5 Valuation of immediate annuities.

(a) For the purposes of this section the applicable interest rate, i, contained in the Appendix B, table I, in effect on the date of termination shall be utilized.

(b) The value of an immediate annuity shall be determined in accordance with the provisions of paragraphs (b)(1)-(9) of this section, as appropriate.

(1) Life annuity payable annually. If a series of payments payable only if the participant is alive are made annually at the beginning of the year, the value of the annuity shall be computed by using the following actuarial equation:

$$\ddot{a} = \frac{N_x}{D_x} .$$

(2) Life annuity payable periodically. If a series of payments payable only if the participant is alive are made at equal intervals of time, a specified number of times per year, at the beginning of each interval, the value of the annuity shall be computed by using the following actuarial equation:

$$\ddot{a}_x^{(m)} = \frac{N_x^{(m)}}{D_x} .$$

(3) Annuity certain payable annually. If a series of payments payable for a fixed period of time are made annually at the beginning of the year, the value of the annuity shall be computed by using the following actuarial equation:

$$\ddot{a}_{\overline{n}|} = \frac{1 - v^n}{1 - v} .$$

(4) Annuity certain payable periodically. If a series of payments payable for a fixed period of time are

made at equal intervals of time, a specified number of times per year, at the beginning of each interval, the value of the annuity shall be computed by using the following actuarial equation:

$$\ddot{a}^{(m)}_{\overline{n}|} = \frac{1 - v^n}{m\,(1 - v^{1/m})}.$$

(5) Annuity certain and continuous. If payments are made at equal intervals of time, a specified number of times per year at the beginning of each interval, and payments cease upon the happening of the later of i) the death of the participant, or ii) the passage of a specified period of time, such an annuity shall be valued using the following actuarial equation:

$$\ddot{a}^{(m)}_{x:\overline{n}|} = \ddot{a}^{(m)}_{\overline{n}|} + \frac{N^{(m)}_{x+n}}{D_x}.$$

(6) Temporary life annuity. If payments are made at equal intervals of time, a specified number of times per year at the beginning of each interval, and payments cease upon the happening of the earlier of i) the death of the participant, or ii) the passage of a specified period of time, such an annuity shall be valued using the following actuarial equation:

$$\ddot{a}^{(m)}_{x:\overline{n}|} = \frac{N^{(m)}_{x} - N^{(m)}_{x+n}}{D_x}.$$

(7) Joint annuity. If payments payable with respect to more than one person are made to both persons only as long as both the participant and the beneficiary

are alive, such an annuity shall be valued by using the following actuarial equation:

$$\ddot{a}_{xy}^{(m)} = \frac{N_{xy}^{(m)}}{D_{xy}} .$$

(8) Joint and survivor annuity (joint basis). If payments payable with respect to more than one person are payable as long as both the participant and beneficiary are alive, and if either dies, payments continue until the death of the second person at a reduced amount provided in the plan (represented by the symbol "p"), such an annuity shall be valued using the following actuarial expression:

$$p\left(\ddot{a}_{x}^{(m)} + \ddot{a}_{y}^{(m)}\right) + (1-2p)\,\ddot{a}_{xy}^{(m)} .$$

(9) Joint and survivor annuity (contingent basis). If benefit payments are payable to the participant as long as he survives, and payable upon his death in a reduced amount provided in the plan (represented by the symbol "p") to a named beneficiary for the beneficiary's lifetime, such an annuity shall be valued using the following actuarial expression:

$$\ddot{a}_{x}^{(m)} + p\left(\ddot{a}_{y}^{(m)} - \ddot{a}_{xy}^{(m)}\right).$$

§2610.6. Valuation of deferred annuities.

(a) Definitions. For the purposes of this section:

(1) "x" represents the present age of the annuitant.

(2) "y" represents the age at which annuity payments begin.

(3) n=y-x.

(4) "i_1," "i_2" and "i_3" represent interest rates which will be in effect during the deferment period. The interest rates contained in the Appendix B, table III, in effect on the date of termination shall be utilized.

(5) "n_1" and "n_2" represent the intervals, respectively, in which the interest rates in paragraph (a)(4) of this section will be in effect, that is, i_1 is in effect during the first n_1 years of deferment, i_2 is in effect during the next n_2 years of deferment, and i_3 is in effect for any remaining portion of the deferment period. The intervals of deferment contained in the Appendix B, table III, in effect on the date of termination shall be utilized.

(6) "G" represents the value of the annuity on the date payments begin.

(b) The value of a deferred annuity shall be determined as follows:

(1) If n is less than or equal to n_1 ($n \leq n_1$), the actuarial value of the deferred annuity shall equal:

$$G \cdot \frac{l_y}{l_x} \cdot (1+i_1)^{-n_1}.$$

(2) If n_1 is less than n and n_1+n_2 is greater than or equal to n ($n_1 < n \leq n_1+n_2$), the actuarial value of the deferred annuity shall equal:

$$G \frac{l_y}{l_x} \cdot (1+i_1)^{-n_1} (1+i_2)^{n_1-n}.$$

(3) If n_1+n_2 is less than n ($n_1+n_2 < n$), the actuarial value of the deferred annuity shall equal:

$$G \cdot \frac{l_y}{l_x} \cdot (1+i_1)^{-n_1} (1+i_2)^{n_1-n} (1+i_3)^{n_1+n_2-n}.$$

§2610.7. Equations for valuation of early retirement benefits.

(a) Definitions. For the purposes of this section:

(1) "x" represents the present age of a plan participant who is eligible for early retirement.

(2) "w" represents the age at which a participant whose age is "x" could first receive early retirement benefits.

(3) "z" represents the normal retirement age provided in the plan.

(4) "y" represents some age between "w" and "z," when a participant elects to retire.

(5) "t_x" represents the probability that a participant whose age is "x" will retire before attaining age x+1. The probability utilized shall be determined by the PBGC based on the provisions of the plan and the circumstances of the case.

(b) The value of an early retirement benefit shall be the sum of all the ${}_xF_y$'s for all y 's equal to or greater than w. This results in F_x, which is the value of the early retirement benefit and is represented by the equation $F_x = {}_xF_w + {}_xF_{w+1} + \cdots + {}_xF_z \cdot {}_xF_y$ shall be computed as follows:

(1) Compute the actuarial value of the benefit payable at each age, y, at which a participant may elect to retire, using the appropriate formula in §2610.6(b). This value shall be denominated ${}_xB_y$.

(2) Multiply each value obtained in paragraph (b)(1) of this section by the probability, ${}_xr_y$, that a participant whose age is "x" will elect to retire at that age, y. Such probability is computed as follows:

(i) If y equals x, ${}_xr_y = t_x$,

(ii) If y is more than x, ${}_xr_y = (1-t_x)(1-t_{x+1}) \cdots (1-t_{y-1})t_y$. The sum of these products will be the value ${}_xF_y$.

§2610.8. Valuation of death benefits.

(a) For the purposes of this section the interest rate, i, contained in the Appendix B, table II, in effect on the date of termination shall be utilized.

(b) The value of a death benefit shall be determined as follows:

(1) Death benefit in the form of whole life insurance. If a death benefit is payable at death, whenever death occurs, such benefit shall be valued by using the following actuarial equation:

$$\bar{A}_x = \frac{\bar{M}_x}{D_x} .$$

(2) Death benefit in the form of term insurance. If a death benefit is payable when death occurs if death occurs within the stated period of time, such benefit shall be valued by using the following actuarial equation:

$$\bar{A}^{1}_{x:\overline{n}|} = \frac{\bar{M}_x - \bar{M}_{x+n}}{D_x} .$$

(3) Death benefit in the form of decreasing term insurance.

(i) If a death benefit in an initial amount of n is payable when death occurs if death occurs within the period covered by the insurance, and the amount of the death benefit decreases each year, such benefit shall be valued using the following actuarial equation:

$$D\bar{A}_{x:\overline{n}|} = \frac{n\bar{M}_x - \bar{R}_{x+1} + \bar{R}_{x+n+1}}{D_x} .$$

(ii) If a death benefit in an initial amount of n is payable when death occurs if death occurs within the period covered by the insurance, and the amount of the death benefit decreases by 1/m for each period stated, which is less than one year, such a benefit shall be valued using the following actuarial equation:

$$D^{(m)}\bar{A}^{1}_{x:\overline{n}|} = \frac{n\bar{M}_x - \bar{R}_{x+1} + \bar{R}_{x+n+1} - \frac{m-1}{2m}(\bar{M}_x - \bar{M}_{x+n})}{D_x}.$$

§2610.9. Valuation of refund annuities

(a) The value of a cash refund annuity shall be computed by adding the values derived from the equations in §2610.5(b)(1) and §2610.8(b)(3)(ii).

(b) The value of an installment refund annuity shall be computed by using the equation in §2610.5(b)(5).

§2610.10. Equations for valuation of other benefits.

Benefits whose value cannot be obtained by application of the equations contained in this part shall be computed using the method to be determined by the PBGC.

APPENDIX A - MORTALITY RATES

The following mortality rates are effective for plans which terminate on or after September 2, 1974:

TABLE I - MORTALITY RATES FOR HEALTHY MALE PARTICIPANTS

Age	q_x	Age	q_x	Age	q_x	Age	q_x
11	0.000000	36	0.001643	61	0.017010	86	0.143179
12	0.000000	37	0.001792	62	0.018685	87	0.155147
13	0.000000	38	0.001948	63	0.020517	88	0.168208
14	0.000000	39	0.002125	64	0.022562	89	0.182461
15	0.001437	40	0.002327	65	0.024847	90	0.198030
16	0.001414	41	0.002556	66	0.027232	91	0.215035
17	0.001385	42	0.002818	67	0.029634	92	0.232983
18	0.001351	43	0.003095	68	0.032073	93	0.252545
19	0.001311	44	0.003410	69	0.034743	94	0.273878
20	0.001267	45	0.003769	70	0.037667	95	0.297152
21	0.001219	46	0.004180	71	0.040871	96	0.322553
22	0.001167	47	0.004635	72	0.044504	97	0.349505
23	0.001149	48	0.005103	73	0.048504	98	0.378865
24	0.001129	49	0.005616	74	0.052913	99	0.410875
25	0.001107	50	0.006196	75	0.057775	100	0.445768
26	0.001083	51	0.006853	76	0.063142	101	0.483830
27	0.001058	52	0.007543	77	0.068628	102	0.524301
28	0.001083	53	0.008278	78	0.074648	103	0.568365
29	0.001111	54	0.009033	79	0.081256	104	0.616382
30	0.001141	55	0.009875	80	0.088518	105	0.668696
31	0.001173	56	0.010814	81	0.096218	106	0.725745
32	0.001208	57	0.011863	82	0.104310	107	0.786495
33	0.001297	58	0.012952	83	0.112816	108	0.852659
34	0.001398	59	0.014162	84	0.122079	109	0.924666
35	0.001513	60	0.015509	85	0.132174	110	0.999999

TABLE II - MORTALITY RATES FOR HEALTHY FEMALE PARTICIPANTS

Age	q_x	Age	q_x	Age	q_x	Age	q_x
11	0.000000	36	0.001173	61	0.010814	86	0.096218
12	0.000000	37	0.001208	62	0.011863	87	0.104310
13	0.000000	38	0.001297	63	0.012952	88	0.112816
14	0.000000	39	0.001398	64	0.014162	89	0.122079
15	0.000000	40	0.001513	65	0.015509	90	0.132174
16	0.000000	41	0.001643	66	0.017010	91	0.143179
17	0.000000	42	0.001792	67	0.018685	92	0.155147
18	0.000000	43	0.001948	68	0.020517	93	0.168208
19	0.000000	44	0.002125	69	0.022562	94	0.182461
20	0.001437	45	0.002327	70	0.024847	95	0.198030
21	0.001414	46	0.002556	71	0.027232	96	0.215035
22	0.001385	47	0.002818	72	0.029634	97	0.232983
23	0.001351	48	0.003095	73	0.032073	98	0.252545
24	0.001311	49	0.003410	74	0.034743	99	0.273878
25	0.001267	50	0.003769	75	0.037667	100	0.297152
26	0.001219	51	0.004180	76	0.040871	101	0.322553
27	0.001167	52	0.004635	77	0.044504	102	0.349505
28	0.001149	53	0.005103	78	0.048504	103	0.378865
29	0.001129	54	0.005616	79	0.052913	104	0.410875
30	0.001107	55	0.006196	80	0.057775	105	0.445768
31	0.001083	56	0.006853	81	0.063142	106	0.483830
32	0.001058	57	0.007543	82	0.068628	107	0.524301
33	0.001083	58	0.008278	83	0.074648	108	0.568365
34	0.001111	59	0.009033	84	0.081256	109	0.616382
35	0.001141	60	0.009875	85	0.088518	110	0.999999

TABLE III - MORTALITY RATES FOR DISABLED MALE PARTICIPANTS

Age	q_x	Age	q_x	Age	q_x	Age	q_x
11	0.000000	36	0.002640	61	0.022240	86	0.172820
12	0.000000	37	0.002800	62	0.024310	87	0.185130
13	0.000000	38	0.003010	63	0.026570	88	0.198250
14	0.000000	39	0.003250	64	0.029040	89	0.212461
15	0.001460	40	0.003530	65	0.031750	90	0.228140
16	0.001540	41	0.003840	66	0.034740	91	0.245771
17	0.001620	42	0.004170	67	0.038040	92	0.265931
18	0.001690	43	0.004530	68	0.041680	93	0.289301
19	0.001740	44	0.004920	69	0.045610	94	0.316659
20	0.001790	45	0.005350	70	0.049790	95	0.351238
21	0.001830	46	0.005830	71	0.054150	96	0.400558
22	0.001860	47	0.006360	72	0.058650	97	0.488422
23	0.001890	48	0.006950	73	0.063260	98	0.668150
24	0.001910	49	0.007600	74	0.068120	99	0.999999
25	0.001930	50	0.008320	75	0.073370	100	0.999999
26	0.001960	51	0.009110	76	0.079180	101	0.999999
27	0.001990	52	0.009960	77	0.085700	102	0.999999
28	0.002030	53	0.010890	78	0.093060	103	0.999999
29	0.002080	54	0.011900	79	0.101190	104	0.999999
30	0.002130	55	0.013000	80	0.109980	105	0.999999
31	0.002190	56	0.014210	81	0.119350	106	0.999999
32	0.002250	57	0.015540	82	0.129170	107	0.999999
33	0.002320	58	0.017000	83	0.139380	108	0.999999
34	0.002400	59	0.018590	84	0.150010	109	0.999999
35	0.002510	60	0.020340	85	0.161140	110	0.999999

TABLE IV - MORTALITY RATES FOR DISABLED FEMALE PARTICIPANTS

Age	q_x	Age	q_x	Age	q_x	Age	q_x
11	0.000000	36	0.002190	61	0.014210	86	0.119350
12	0.000000	37	0.002250	62	0.015540	87	0.129170
13	0.000000	38	0.002320	63	0.017000	88	0.139380
14	0.000000	39	0.002400	64	0.018590	89	0.150010
15	0.000000	40	0.002510	65	0.020340	90	0.161140
16	0.000000	41	0.002640	66	0.022240	91	0.172820
17	0.000000	42	0.002800	67	0.024310	92	0.185130
18	0.000000	43	0.003010	68	0.026570	93	0.198250
19	0.000000	44	0.003250	69	0.029040	94	0.212461
20	0.001460	45	0.003530	70	0.031750	95	0.228140
21	0.001540	46	0.003840	71	0.034740	96	0.245771
22	0.001620	47	0.004170	72	0.038040	97	0.265931
23	0.001690	48	0.004530	73	0.041680	98	0.289301
24	0.001740	49	0.004920	74	0.045610	99	0.316659
25	0.001790	50	0.005350	75	0.049790	100	0.351238
26	0.001830	51	0.005830	76	0.054150	101	0.400558
27	0.001860	52	0.006360	77	0.058650	102	0.488422
28	0.001890	53	0.006950	78	0.063260	103	0.668150
29	0.001910	54	0.007600	79	0.068120	104	0.999999
30	0.001930	55	0.008320	80	0.073370	105	0.999999
31	0.001960	56	0.009110	81	0.079180	106	0.999999
32	0.001990	57	0.009960	82	0.085700	107	0.999999
33	0.002030	58	0.010890	83	0.093060	108	0.999999
34	0.002080	59	0.011900	84	0.101190	109	0.999999
35	0.002130	60	0.013000	85	0.109980	110	0.999999

TABLE V - MORTALITY RATES FOR DISABLED MALE PARTICIPANTS RECEIVING SOCIAL SECURITY DISABILITY BENEFIT PAYMENTS

Age	q_x	Age	q_x	Age	q_x	Age	q_x
11	0.000000	36	0.046900	61	0.076300	86	0.177100
12	0.000000	37	0.046900	62	0.078000	87	0.185100
13	0.000000	38	0.047100	63	0.079700	88	0.198200
14	0.000000	39	0.047300	64	0.081300	89	0.212500
15	0.000000	40	0.047600	65	0.083000	90	0.228100
16	0.000000	41	0.048200	66	0.084900	91	0.245800
17	0.000000	42	0.048800	67	0.087100	92	0.265900
18	0.000000	43	0.049500	68	0.089600	93	0.289300
19	0.000000	44	0.050400	69	0.092400	94	0.316700
20	0.051000	45	0.051400	70	0.095300	95	0.351200
21	0.051000	46	0.052500	71	0.098600	96	0.400600
22	0.051000	47	0.053700	72	0.102100	97	0.488400
23	0.051000	48	0.055000	73	0.106000	98	0.668200
24	0.051000	49	0.056700	74	0.110700	99	0.999900
25	0.051000	50	0.058000	75	0.115600	100	0.999900
26	0.051400	51	0.059500	76	0.120800	101	0.999900
27	0.051800	52	0.061200	77	0.126400	102	0.999900
28	0.051000	53	0.062300	78	0.132600	103	0.999900
29	0.050200	54	0.064500	79	0.139100	104	0.999900
30	0.049500	55	0.066200	80	0.145700	105	0.999900
31	0.048800	56	0.067900	81	0.152200	106	0.999900
32	0.048200	57	0.069500	82	0.158200	107	0.999900
33	0.047600	58	0.071200	83	0.163800	108	0.999900
34	0.047300	59	0.072900	84	0.168800	109	0.999900
35	0.047000	60	0.074600	85	0.173200	110	0.999900

TABLE VI - MORTALITY RATES FOR DISABLED FEMALE PARTICIPANTS RECEIVING SOCIAL SECURITY DISABILITY BENEFIT PAYMENTS

Age	q_x	Age	q_x	Age	q_x	Age	q_x
11	0.000000	36	0.040200	61	0.044900	86	0.124100
12	0.000000	37	0.040000	62	0.045600	87	0.129200
13	0.000000	38	0.039900	63	0.046500	88	0.139400
14	0.000000	39	0.039700	64	0.047300	89	0.150000
15	0.000000	40	0.039600	65	0.050000	90	0.161100
16	0.000000	41	0.039400	66	0.051500	91	0.172800
17	0.000000	42	0.039300	67	0.053500	92	0.185100
18	0.000000	43	0.039200	68	0.055800	93	0.198200
19	0.000000	44	0.039200	69	0.058400	94	0.212500
20	0.042600	45	0.039200	70	0.061000	95	0.228100
21	0.042600	46	0.039200	71	0.063900	96	0.245600
22	0.042600	47	0.039400	72	0.067100	97	0.265900
23	0.042600	48	0.039600	73	0.070900	98	0.289300
24	0.042600	49	0.039800	74	0.074800	99	0.316700
25	0.042600	50	0.040100	75	0.078200	100	0.351200
26	0.042700	51	0.040300	76	0.081200	101	0.400600
27	0.042800	52	0.040700	77	0.085000	102	0.488400
28	0.043000	53	0.041000	78	0.087900	103	0.668200
29	0.043000	54	0.041300	79	0.091300	104	0.999900
30	0.043200	55	0.041700	80	0.094600	105	0.999900
31	0.042500	56	0.042000	81	0.099000	106	0.999900
32	0.041900	57	0.042400	82	0.102800	107	0.999900
33	0.041300	58	0.042900	83	0.107000	108	0.999900
34	0.040900	59	0.043500	84	0.112300	109	0.999900
35	0.040500	60	0.044200	85	0.118800	110	0.999900

APPENDIX B - INTEREST RATES AND INTERVALS OF DEFERMENT

The interest rates and intervals of deferment contained in this Appendix will be amended by the PBGC from time to time to reflect changes in market conditions.

The following interest rates and intervals of deferment shall be effective for plans which terminate on or after September 2, 1974 and on or before September 30, 1975:

Table I - Interest rate for valuing immediate annuities.

An interest rate of 8% shall be used to value immediate annuities, and to compute the quantity "G" in §2610.6.

Table II - Interest rate for valuing death benefits.

An interest rate of 5% shall be used to value death benefits pursuant to §2610.8.

Table III - Interest rates and intervals of deferment for valuing deferred annuities.

The following interest rates shall be used to value deferred annuities pursuant to §2610.6:

(1) i_1 = 7 1/4%

(2) i_2 = 5 3/4%

(3) i_3 = 4 1/4%

The following intervals of deferment shall be used to value deferred annuities pursuant to §2610.6:

(1) n_1 = 7 years

(2) n_2 = 8 years

APPENDIX C - ILLUSTRATIVE BENEFIT VALUATION RESULTS

The following results are obtained by application of the appropriate methods and rates set forth in this regulation to a plan terminating on September 15, 1974.

Table 1 - Current value of a life annuity of 10 dollars per month payable to a healthy participant.

Age of Participant	Male	Female
45	$1,334.48	$1,392.31
50	$1,262.56	$1,334.48
55	$1,176.12	$1,262.56
60	$1,074.44	$1,176.12
62	$1,029.82	$1,137.23
63	$1,006.84	$1,116.91
65	$ 959.87	$1,074.44
67	$ 912.11	$1,029.44
70	$ 837.96	$ 959.87
75	$ 708.65	$ 837.96
80	$ 581.36	$ 708.65
85	$ 462.26	$ 581.36

Table 2 - Current value of a deferred life annuity of 10 dollars per month payable to a healthy participant at ages 60 and 65.

Age of Participant	Deferred to Age 60		Deferred to Age 65	
	Male	Female	Male	Female
25	$156.58	$180.92	$103.28	$126.41
30	$193.86	$224.10	$127.87	$156.58
35	$240.19	$277.45	$158.44	$193.86
40	$298.44	$343.78	$196.86	$240.19
45	$372.76	$427.15	$245.88	$298.44
50	$504.62	$573.01	$309.92	$372.76
55	$713.06	$797.88	$425.77	$504.62
60	xx	xx	$615.01	$713.06
61	xx	xx	$669.98	$772.38
62	xx	xx	$731.00	$837.43
63	xx	xx	$798.92	$908.94
64	xx	xx	$874.80	$987.62

Issued in Washington, D.C., this 9th day of December 1975.

STEVEN E. SCHANES,
Executive Director, Pension Benefit Guaranty Corporation.

Issued on the date set forth above, pursuant to a resolution of the Board of Directors approving the publication of these proposed regulations and authorizing its Executive Director to issue same.

HENRY ROSE,
Secretary.

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